

California Energy Commission

STAFF REPORT

LOCALIZED HEALTH IMPACTS REPORT

For Selected Projects Awarded Funding Through
the Alternative and Renewable Fuel and Vehicle
Technology Program Under Solicitation GFO-17-
606 – Chino Light-Duty Hydrogen Vehicle
Refueling Station

California Energy Commission

Gavin Newsom, Governor



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ABSTRACT

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007) created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This statute, amended by Assembly Bill 109 (Núñez, Chapter 313, Statutes of 2008), authorizes the California Energy Commission to “develop and deploy innovative technologies that transform California’s fuel and vehicle types to help attain the state’s climate change policies.” Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013) reauthorizes the ARFVTP through January 1, 2024.

AB 118 also directs the California Air Resources Board (CARB) to develop guidelines to ensure air quality improvements. CARB’s Air Quality Improvement Program (AQIP) Guidelines, approved in 2008, are published in the *California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1, AB 118 Air Quality Guidelines for the Alternative and Renewable Fuel and Vehicle Technology Program*. The guidelines require the California Energy Commission, as the funding agency, to analyze the localized health impacts of ARFVTP-funded projects that require a permit (13 CCR § 2343).

This Localized Health Impacts Report analyzes and reports on the potential health impacts to communities from projects seeking Energy Commission funding. Information submitted by project funding applicant(s) are used in this report to help identify communities at a higher risk of adverse health effects from pollution. As provided by 13 CCR § 2343, this Localized Health Impacts Report is required to be available for public comment for 30 days prior to the approval of projects.

Keywords: Air pollution, air quality improvement program (AQIP), Alternative Fuels, California Air Resources Board (CARB), Assembly Bill (AB) 118, California Environmental Quality Act (CEQA), environmental justice indicators (EJ), Environmental Justice Screening Method (EJSM), hydrogen, hydrogen infrastructure, localized health impacts (LHI)

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EXECUTIVE SUMMARY

Under the *California Code of Regulations Title 13, (CCR § 2343)*, this Localized Health Impacts Report (LHI report) describes the alternative fuel infrastructure project proposed for Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) funding that may require a conditional or discretionary permit or environmental review such as conditional use permits, air-quality permits, wastewater permits, hazardous waste disposal permits, and other land-use entitlements. This LHI report does not include projects that require only residential building permits, mechanical/electrical permits, or fire/workplace safety permits, as these are outside the scope of this LHI report.

The California Energy Commission is required to assess the local health impacts of projects proposed for ARFVTP funding. This LHI report focuses on the potential health impacts to communities from project-related emissions or pollution. Project locations where communities potentially have a higher risk to adverse health impacts from pollution are identified as high-risk community project locations. High-risk communities are identified using demographic data with environmental data for air quality from the California Air Resources Board.

Environmental justice communities, low-income communities, and minority communities are considered the most impacted by any project that could result in increased criteria and toxic air pollutants within an area. Preventing and minimizing health-risks from pollution are vital in any community, but they are especially important for communities already considered at high-risk due to preexisting poor air quality and other factors prevalent in their communities.

The California Energy Commission proposes to fund a hydrogen infrastructure project under Grant Solicitation GFO-17-606. The project applicant, ITM Power Inc., is offering to complete the construction of an open retail hydrogen refueling station capable of producing and dispensing at least 100 kilograms of 100 percent renewable hydrogen fuel per day.

This Localized Health Impacts Report has assessed the potential project-related health impacts to communities within the city of Chino (San Bernardino County). Based on staff's analysis, there are negligible to no anticipated adverse health impacts to local communities from implementing this project. Potentially, this project could provide improved quality of life and reduce pollution by encouraging the adoption of low-carbon fuels and zero-emission vehicles, and the reduction of California's dependency on petroleum-based fuel sources known to cause adverse health impacts.

CHAPTER 1:

Projects Proposed for Funding

On August 17, 2017, the California Energy Commission released a grant solicitation titled “Chino Light-Duty Vehicle Hydrogen Refueling Station” (GFO-17-606) under the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). GFO-17-606 offered grant funding to complete the construction of a publicly accessible hydrogen refueling station in the city of Chino (San Bernardino County). Once completed, the Chino station will be capable of producing and dispensing at least 100 kilograms of 100 percent renewable hydrogen fuel per day. An on-site electrolyzer¹ will use renewable energy sources² to produce the refueling stations hydrogen fuel supply. The Chino station will be marketed as an open retail hydrogen refueling station available to all fuel cell electric vehicle (FCEV) drivers.

On December 12, 2018, the Energy Commission posted the notice of proposed awards (NOPA) for GFO-17-606,³ resulting in one project by ITM Power Inc. (ITM-Power) proposed for funding. This Localized Health Impacts Report (LHI report) assesses and reports on the potential localized health impacts from the proposed project.

This chapter summarizes the project proposed for Energy Commission funding and provides general information about this project for context. The project details under GFO-17-606, along with the environmental justice (EJ) indicators⁴ identified by staff for the project location, are in Table 1. EJ indicator definitions are found in Appendix A of this LHI report.

Table 1: Project Details Along With EJ Indicators

Applicant	Project Description	Proposed Location	EJ Indicator(s)
ITM Power Inc.	Completion of a partially built hydrogen refueling station	12600 East End Avenue Chino, CA 91710	Minority and Unemployment

Source: California Energy Commission staff

¹ An *electrolyzer* is a device that uses electricity to separate water into hydrogen and oxygen, a process also known as *electrolysis*.

² Eligible renewable electricity sources include geothermal, small hydroelectric (30 megawatts or less), ocean wave, ocean thermal, tidal current, photovoltaics (PV), solar thermal, biomass digester gas, municipal solid waste conversion (noncombustion thermal process), and wind.

³ The notice of proposed award can be found at https://www.energy.ca.gov/contracts/GFO-17-606_NOPA.pdf.

⁴ EJ indicators developed by the United States Environmental Protection Agency (U.S. EPA), Office of Policy. Available at <https://www.epa.gov/ejscreen/environmental-justice-indexes-ejscreen>.

ITM Power Inc. – Chino Light-Duty Vehicle Hydrogen Refueling Station

The site where the Chino station is planned remains partially constructed by a previous company that is no longer able to complete the station. The site is zoned for industrial and commercial use, with two elementary schools within one mile of the proposed location. As most of the major earthwork was completed by the previous company, minimal soil disturbance is expected from ITM-Power's construction other than trenching work between the hydrogen production and dispensing equipment. ITM-Power anticipates that vehicle traffic to the project site will increase to a maximum of 40 vehicles per day during construction. The Chino station is designed to use an on-site electrolyzer to produce 100 percent renewable hydrogen from renewable energy sources. This design eliminates the need for diesel-powered delivery trucks, which generate harmful emissions and reduce air quality when replenishing the fuel supply of a refueling station.

ITM-Power proposes to complete the Chino station by installing hydrogen production equipment, hydrogen fuel dispensing equipment, and a point of sale terminal. Once completed, the Chino station will be an open retail⁵ hydrogen refueling station capable of producing and dispensing more than 100 kilograms per day of SAE J2719⁶ grade, renewably sourced FCEV hydrogen fuel.

Public Comment

As provided by Title 13, Section 2343 of the California Code of Regulations, a 30-day public review period applies to this LHI report from the date it is posted on the Energy Commission website. The original posting date for this report is listed at:

<https://www.energy.ca.gov/altfuels/documents/index.html>

The Energy Commission encourages comments by email. Please include your name or organization's name in the name of the file. Send comments in either Microsoft® Word format (.doc) or in Adobe® Acrobat® format (.pdf) to FTD@energy.ca.gov.

The public can email comments to FTD@energy.ca.gov or send them to:

California Energy Commission
Fuels and Transportation Division
1516 Ninth Street, MS-44
Sacramento, CA 95814-5512

All written comments will become part of the public record and may be posted to the Internet.

⁵ *Open retail* refers to stations that can provide and sell hydrogen fuel to the public.

⁶ SAE J2719 represents a hydrogen fuel-quality grade set by the Society of Automotive Engineers (SAE) and adopted under the *California Code of Regulations Title 4, Division 9, Chapter 6, Article 8* for hydrogen fuel specification standards.

News media should direct inquiries to the Media and Public Communications Office at (916) 654-4989, or by e-mail at mediaoffice@energy.ca.gov.

CHAPTER 2:

Location Analysis

Under the *California Code of Regulations Title 13, (CCR § 2343)*, this LHI report describes the hydrogen infrastructure project proposed for ARFVTP funding that may require a conditional use permit, discretionary permit, or California Environmental Quality Act (CEQA) review. The Energy Commission interprets “permits” to suggest discretionary and conditional use permits because they require a review of potential impacts to communities and the environment before issuance. Since ministerial-level permits, such as building permits, do not assess public health-related pollutants, Energy Commission staff does not assess projects requiring only ministerial-level permits in this report.

This LHI report analyzes the project location by applying staff’s interpretation of the Environmental Justice Screening Method (EJSM).⁷ A proposed project location must meet a two-part environmental and demographic standard for staff to identify the location as a high-risk community project location. The environmental standard uses California Air Resources Board (CARB) air quality monitoring data on nonattainment⁸ status for areas with a high concentration of air pollutants. The demographic standard uses data from the Employment Development Department’s *Monthly Labor Force Data*⁹ and U.S. Census Bureau’s *American Community Survey*¹⁰ data on age, poverty, race, and unemployment. The city name, along with demographic information for the proposed project location under GFO-17-606, is in Table 2 of this LHI report.

Based on CARB air quality monitoring data,¹¹ the proposed Chino station is within a nonattainment zone for ozone, particulate matter (PM)¹² 2.5 and PM 10. This finding indicates that there may be poor air quality where the proposed project is located. If a project located within a nonattainment zone has more than one EJ indicator (shown in Table 1), staff will identify it as a high-risk community project location. When the city of the proposed project location is identified as a high-risk community project location, the city name on Table 2 will

7 California Air Resources Board, *Air Pollution and Environmental Justice, Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability Into Regulatory Decision-Making*, 2010. (Sacramento, California) Contract authors: Manuel Pastor Jr., Ph.D., Rachel Morello-Frosch, Ph.D., and James Sadd, Ph.D.

8 *Nonattainment status* (or zones) are areas designated by the California Air Resources Board with at least one violation of an air quality standard for pollutants within the last three years, as of June 2017. Available at <https://www.arb.ca.gov/desig/desig.htm>.

9 <https://www.labormarketinfo.edd.ca.gov/file/lfmonth/countyur-400c.pdf>.

10 https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml.

11 <https://www.arb.ca.gov/desig/adm/adm.htm>.

12 *Particulate matter* is unburned fuel particles that form smoke or soot and stick to lung tissue when inhaled. The number following “PM” represents particle size in microns.

be in red font, with the percentage values of the EJ indicator thresholds exceeded highlighted in yellow. For example, staff has identified the project location in Chino as a high-risk community project location, due to the associated nonattainment status and the exceeding of more than one EJ indicator threshold. For more details on the EJSM and EJ indicator criteria, please see Appendix A of this LHI report.

Table 2: EJ Indicators by Project Location City Demographic

	Below Poverty (2017)	Black or African American (2017)	American Indian and Alaska Native (2017)	Asian and Native Hawaiian and Pacific Islander (2017)	Hispanic or Latino Race (2017)	Persons Under 5 Years of Age (2017)	Persons Over 65 Years of Age (2017)	Unemployment (November 2018)
California	11.1%	5.8%	0.7%	14.5%	38.8%	6.4%	13.2%	3.9%
EJ Indicator Threshold	>11.1%	>30%	>30%	>30%	>30%	≥26.4%	≥33.2%	>3.9%
Chino	8.7%	5.8%	0.5%	12.9%	52.4%	6.1%	10.2%	4.3%

Sources: California Energy Commission staff, Employment Development Department, and U.S. Census Bureau. *The city/county names in red indicate a high-risk community, while the yellow highlighted percentages indicate which categories exceed the EJ indicator threshold.

**An asterisk (*) may signify a default to county-level data

Analysis Summary

Staff has identified ITM Power Inc.'s proposed Chino Station as a high-risk community project location. The community in Chino has poor air quality, a large minority population and a higher-than-average unemployment rate. Project-related emissions are minimized by generating the hydrogen fuel dispensed from this location on-site using renewable energy sources. On-site hydrogen fuel production benefits the community by eliminating the need for diesel-powered delivery trucks, which produce harmful emissions. Implementing this project is expected to provide improved quality of life to the community by encouraging the adoption of low-carbon fuels such as hydrogen and reducing California's dependency on petroleum-based fuel sources known to cause adverse health impacts. The anticipated health impacts to the city where this project will be located are positive in regard to cleaner air and anticipated greenhouse gas reductions.

GLOSSARY

CALIFORNIA CODE OF REGULATIONS - The official compilation and publication of the regulations adopted, amended, or repealed by state agencies under the Administrative Procedure Act (APA). Properly adopted regulations that have been filed with the Secretary of State have the force of law.

ENVIRONMENTAL JUSTICE - The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

ENVIRONMENTAL JUSTICE SCREENING METHOD - A screening approach for combining environmental and demographic indicators to inform agency outreach and engagement practices regarding environment justice.

FUEL CELL ELECTRIC VEHICLE - A vehicle that uses an electric propulsion system with hydrogen as the fuel source.

GRANT FUNDING OPPORTUNITY - Where the Energy Commission offers applicants an opportunity to receive grant funding for projects meeting the solicitation requirements.

LOCALIZED HEALTH IMPACTS - Potential project related health impacts from Energy Commission funded projects.

PARTICULATE MATTER - Any material, except pure water, that exists in a solid or liquid state in the atmosphere. The size of particulate matter can vary from coarse, wind-blown dust particles to fine particle combustion products.

LIST OF ACRONYMS

AB	Assembly Bill
AQIP	Air Quality Improvement Program
ARFVTP	Alternative and Renewable Fuel and Vehicle Technology Program
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
EJ	environmental Justice
EJSM	Environmental Justice Screening Method
FCEV	fuel cell electric vehicle
GFO	Grant funding opportunity
PM	particulate matter
SB	Senate Bill
U.S. EPA	United States Environmental Protection Agency

APPENDIX A:

Localized Health Impacts Report Method

This LHI report assesses the potential health impacts on communities from projects proposed to receive ARFVTP funding. This LHI report is prepared under the *California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1 (CCR § 2343)*:

“(6) Localized health impacts must be considered when selecting projects for funding. The funding agency must consider EJ consistent with state law and complete the following:

(A) For each fiscal year, the funding agency must publish a staff report for review and comment by the public at least 30 calendar days prior to the approval of projects. The report must analyze the aggregate locations of the funded projects, analyze the impacts in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including, but not limited to, communities of minority populations or low-income populations, and identify agency outreach to community groups and other affected stakeholders.

(B) Projects must be selected and approved for funding in a publicly noticed meeting.”

This LHI report is not intended to be a detailed pollution analysis of proposed projects nor is it intended to substitute for the environmental review conducted during CEQA. This LHI report includes staff’s application of the EJSM developed by the U.S. EPA to help identify projects in areas where social vulnerability indicators, high exposure to pollution, and greater health-risks are present.

Energy Commission staff identifies high-risk community project locations using data from CARB, the U.S. Census Bureau, and other public agencies. Staff analyzes these data to assign EJ indicators for each project location specified in the LHI report. The proposed project location must meet a two-part standard as follows:

Part 1 – Environmental Standard:

- Communities located within an air quality nonattainment zone for ozone, PM 2.5, or PM 10, as designated by the California Air Resources Board for criteria pollutants.

Part 2 – Demographic Standard:

- Communities having more than one of the following EJ indicators for (1) minority, (2) poverty, (3) unemployment, and (4) age. The EJ indicator thresholds is defined by staff as:
 - 1) A minority subset represents more than 30 percent of a given city’s population.
 - 2) A city’s poverty level exceeds the state average poverty level.

- 3) The city (or county if city data is unavailable) unemployment rate exceeds the state average unemployment rate.
- 4) The percentage of people living in a city who are younger than 5 years of age or older than 65 years of age is 20 percent higher than the state average for persons under 5 years of age or over 65 years of age.